

# POWER CONTROL AND OPTIMIZATION

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Nader Barsoum  
Gerhard-Wilhelm Weber  
Pandian Vasant



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# POWER CONTROL AND OPTIMIZATION

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# POWER CONTROL AND OPTIMIZATION

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## Preface

After the successful event of the second global conference in Bali Indonesia of June 2009, the third global conference on power control and optimization PCO 2010 being held in a stunning, spectacular and dramatic city of Gold Coast, Australia. It is organized by the Middle East Technical University, the Institute of Applied Mathematics and Curtin University of Technology.

PCO Global is a leading global player in the area of Power, Control and Optimization for innovative scientific and engineering activities such as organizing international conferences, journal publications and global education. It's an official registered organization with IP0285080 in Malaysia (2008). This organization consists of highly qualified professional from all over the world in the area of Science, Engineering, Economics and others research field. PCO global strongly believe and very confident in creating a new global education to all the researchers and students from all over the world.

This global organization as it belongs to a civilian society uses a public email address and common website. Global is unconditional, unconstraint, flexible, considers all nation systems, acts for a high degree of satisfaction with immediate response, and has unique registration system using a union currency.

We trust that the theme of the conference **"Innovation in Optimum Technology"** provides emulation between the researchers in their analytical and practical results as it relates to the industrial, health, commercial, marketing and business need. We also believe that the program will provide the speaker, presenters and participants the opportunities to exchange ideas, share experience and foster solid relationship within the conference topics.

The primary goal of this conference is on creating a unique opportunity for all participants across the globe to become "connected" and share knowledge, ideas and practices in global grounds. This global link will bring a significant contribution to the global body of the knowledge for human kind. The platform is the aim for all researchers, engineers, practitioners, academicians, students and industrial professionals sharing to present their research results and development activities in the area of power control and its optimization techniques. Presenters will give the optimum materials in these areas, and over the next three days we are certain to find all delegates will have stimulating discussions in both formal sessions and booths exhibition during breaks.

## Scope

Many engineering systems, science, financial, business and economics suffer from a problem of developing a system that can cope with variations of system or control parameters, measurements uncertainty and complex multi-objective optimization criterion. The need for a priori knowledge and the inability to learn from past experience make the design of robust, adaptive and stable systems a difficult task.

Currently, researches on energy resources are found to be a great importance for future alternative replacement of oil. Computational Intelligence has been proven to have successful solution of complex optimization problems by fuzzy logic, neural Network, Evolutionary Algorithms, Genetic with line or pattern search, Particle Swam Optimization, Ant Colony Optimization and Hybrid System Optimization in variety of engineering, science, business, finance, economics, management and hybrid energy resources applications. They include system identification, parameter estimation, multi-objective optimization, robust solution, adaptive system, self organization and failure analysis. The goal of this conference is to bring together researchers working on the development of techniques and methodologies to improve the performance of power systems, energy planning and environments, controllers and robotics, operation research, and modern artificial computational intelligent techniques.

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